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Chapter IV

What Factors Affect Caregiver Communication in Psychogeriatric Care?

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Abstract

Background

Dementia among nursing home residents is often accompanied by high care dependency and behavioral disturbances, possibly resulting in increased workload, increased stress reactions and decreased job satisfaction. This might result in negative caregiver communicative behavior. Until now, little is known about the relationship between caregivers' perceived '*quality of working life'* (i.e. workload, job satisfaction and stress reactions) and the quality of caregiver communication in psychogeriatric care. The aim of this study is to investigate the relationship between perceived '*quality of working life'* and observed Certified Nursing Assistants' (CNAs) communication during morning care of demented nursing home residents and to find out what other factors affect caregiver communication in psychogeriatric care.

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Methods

228 videotapes were recorded during morning care in twelve psychogeriatric wards and analysed by independent observers. The videorecordings were assessed using a measurement scale that measures the overall quality of nurse communication in psychogeriatric care, based on Kitwood's Dialectical Framework. The scale distinguishes both positive CNA communication ('Positive Person Work') and negative CNA communication ('Malignant Social Psychology'). In addition, three rapport-building nonverbal, affective communicative behaviors were selected to be observed: eye-contact, affective touch and smiling. Inter-observer reliability was good. The '*quality of working life'* was assessed by measuring perceived workload (time pressure), stress reactions and job satisfaction. First, bivariate analyses were done to explore the relationship between work-related factors ('*quality of working life*') and the quality of nurse communication. Next, the influence of intervening factors, i.e. resident and CNA characteristics and the care model used by participating CNAs, was established by multivariate regression analysis.

Results

A high workload, high levels of stress reactions and dissatisfaction with work are related to less positive communicative behavior towards demented nursing home residents. Regarding nonverbal communication, results are similar. Perceived workload is associated with less eye-contact, less smiling and less affective touch. These effects disappear when the care model used on the ward is taken into account. There is a strong positive relationship between the use of an integrated snoezelen care model and the quality of overall CNA communication and CNA nonverbal communication. CNA communication is also influenced by the care dependency of the resident, the residents' age and the age of the CNA.

Conclusion

There is a relationship between the '*quality of working life'* and CNA communicative behavior. The care model used by the nursing home (i.e. integrated snoezelen) seems to be an important, intervening factor. This implicates that management investments in patient-centered care models such as integrated snoezelen will result in high quality of caregiver communication and, finally, better quality of care.

Introduction

Dementia is a disease with a high prevalence. Worldwide, the number of new cases of dementia in 2000 was estimated at 4.6 million. About 6.1% of the population above 65 years of age suffer from dementia, which is about 0.5% of the world population (Wimo, Winblad, Aguero-Torres & Von Strauss, 2003). Alzheimer's disease is the most common type of

dementia, accounting for 50-75% of the total dementia population (American Psychiatric Association, 1997). The incidence of Alzheimer's disease increases with age and is estimated at 0.5% per year from age 65-69 to 8% per year from age 85 onward (Hebert et al., 1995). Mental and functional loss forces a large number of elderly people with dementia to move to nursing homes. Dutch nursing homes have separate psychogeriatric wards for dementia patients with highly care-dependent residents, in which about 27,000 dementia patients are residing (Hoek, Pennix, Ligthart & Ribbe, 2000). Dutch nursing home patients with Alzheimer's disease have a mean disease duration of 7.2 years (range 1.3-23.5), whereas patients with vascular dementia have a mean disease duration of 5.3 years (range 0.8-15.1) (Koopmans, Ekkerink & Van Weel, 2003).

Dementia among nursing home residents is often accompanied by high care dependency and behavioral disturbances. The prevalence of Behavioral and Psychological Symptoms of Dementia has been estimated between 58% and 100% of patients with at least one of the five syndromes psychosis, aggression, psychomotor agitation, depression and apathy (Zuidema & Koopmans, 2002).

These disturbances can be problematic to caregivers and increase the workload. Besides, many Dutch nursing homes have a high workload, partly caused by difficulties with the recruitment of sufficient staff (Hoek et al., 2000). High workload may influence the level of stress reactions and job satisfaction negatively, possibly resulting in negative communicative behavior of nurses towards demented elderly and, consequently, the quality of care. Until now, little is known about the relationship between nurses' perceived '*quality of working life'* (i.e. workload, job satisfaction and stress reactions) and the quality of nurse communication in the care for demented nursing home residents. This knowledge is important because caregivers' communication is likely to be related to the well-being of demented elderly and the quality of life of demented nursing home residents depends for a major part on the extent to which the nursing care meets the residents' needs. Research shows that even patients suffering from severe dementia are sensitive to the emotional caregivers' communication. Moreover, the quality of the relationship between caregivers and patients and the quality of nurse communication are supposed to be closely related to both caregiver burden and patient symptomology (Cicirelli, 1993; Edberg, Nordmark & Hallberg, 1995; Magai & Cohen, 1998; Magai, Cohen & Gomberg, 2002; Williamson & Schulz, 1990). Understanding what factors in the quality of working life are associated with caregivers' behavior and communication might improve the quality of care. The purpose of this study is to investigate the relationship between perceived *'quality of working life'* and observed caregiver communication, i.e. Certified Nursing Assistant (CNA) communication, during morning care of demented nursing home residents. Secondly, this study aims to find out what other factors affect caregiver communication in psychogeriatric care.

Quality of Care for Demented Elderly: Theoretical Background

Formerly, nursing home care was mainly aimed at hygiene and good nutrition (De Lange, 2004). During the last decade of the 20th century, criticism of the conventional task-oriented

approach to dementia care arose. As there were no pharmacological solutions to dementia, the development of non-pharmacological, psychosocial interventions has grown rapidly in recent years. New ideas have particularly developed on the way caregivers should deal with dementia patients to increase the well-being of demented residents. These ideas are mostly based on the principles of 'person-centred' care (Kitwood, 1996; 1997; 1998). Kitwood developed a framework for psychogeriatric nursing care: the Dialectical Framework (Kitwood, 1996). The central thesis in this framework is that the dementing process arises from an interaction between neurological impairment and social psychological processes (e.g., the interaction between caregivers and demented elderly people). Social psychology enhances or diminishes an individual's sense of safety, value and personal well-being (Kitwood, 1993a;1993b). Kitwood distinguishes certain kinds of interaction that are harmful to those who have dementia, and interactions that make for well-being (Kitwood, 1996). The interactions that contribute to the undermining of personhood are called 'Malignant Social Psychology (MSP)'. Examples of Malignant Social Psychology are 'infantilization' (treating a person very patronizingly in the same way as a parent might treat a very young child) or 'disempowerment' (not allowing a person to use the abilities that they have; failing to help them to complete actions that they have initiated). The interactions that are clearly conductive to the maintenance of personhood and well-being are named 'Positive Person Work (PPW)' (Kitwood, 1998). Examples of Positive Person Work are 'recognition' (acknowledging a demented resident as a person and affirm him or her in his or her uniqueness), 'negotiation' (consult the demented resident about preferences, desires, and needs, rather then being conformed to others' assumptions) or 'timalation' (the direct and pleasurable stimulation of the senses, in a way that accords with the values and scruples of the person with dementia) (Kitwood, 1996).

Caregivers, and especially Certified Nursing Assistants (CNAs), are an important factor in the environment of demented nursing home residents. The affective state or well-being of demented elderly people has long received little attention, with even less concerns to events that promote or threaten well-being. According to the Dialectical Framework, there is much that can be done by caregivers in psychogeriatric care that positively influences the mood and behavior of nursing home residents. Once person-centred care has been realised, the quality of care provided for persons with dementia improves, which will result in increased quality of life of residents. From the end of the 20th century, many caregivers prefer a person-centred approach to care provision (Innes & Surr, 2001). Therefore, psychosocial methods and person-centred care models such as validation, integrated emotional-oriented care, gentle care or integrated snoezelen are developed. Many caregivers are enthusiastic about these newly developed methods (Schrijnemaekers, 2002). However, a change to person-centred care is not always easy to achieve. One of the reasons might be the belief that nurses have in the biomedical nature of dementia as the standard paradigm. This might have positive advantages for them as it allows them to retreat into emotional non-involvement when they do not have the personal resources available to deal appropriately with people with dementia (Adams, 1996).

One of the psychosocial caremodels that are developed during the last decades and is becoming more and more popular as a potential intervention on psychogeriatric wards is snoezelen, also referred to as Multi-Sensory Stimulation (MSS). Snoezelen as a care model

fits the premises of the Dialectical Framework. It was developed in the Netherlands, but spread rather rapidly across Europe, in particular the United Kingdom, in the 1980s and 1990s. It is just beginning to appear in the United States (Chitsey, Haight & Jones, 2002). Snoezelen can be defined as an approach which actively stimulates the senses of hearing, touch, vision and smell in a resident-oriented, non-threatening environment (Kok, Pater & Choufour, 2000). It is intended to provide individualized, gentle sensory stimulation without the need for higher cognitive processes, such as memory or learning, in order to achieve or maintain a state of well-being. Traditionally, snoezelen was applied in a special room with an array of equipment, offering multiple stimulation, covering all the sensory channels (i.e., a vibrating bed, soft comfortable furnishings, aroma steamers, spotlights, mirrors and music), both to stimulate and to relax (Noorden, 1999; Lancioni, Cuvo & O'Reilly, 2002). In the present study, snoezelen is extended to the 24-h daily care and therefore called 'integrated snoezelen'. Caregivers learn to incorporate personal circumstances of the residents such as lifestyle, preferences, desires and cultural diversity into 24-h daily care (Noorden, 1999). By interviewing family members ('history taking') and systematic observations ('stimulus preference screening'), the caregivers find out what stimuli the resident enjoy most (Lancioni et al., 2002). Then, the information is integrated in the residents' care plan ('*snoezel care plan*'). Caregivers also learn to adapt their attitude and practical skills to integrate multi-sensory stimuli in the care. The ultimate goal of integrated snoezelen is, consistent with the concept of patient-centeredness, the caregivers' understanding of the residents' real needs, preferences and wishes (Bensing, 2000). Snoezelen aims to reduce residents' maladaptive behaviors, to increase positive behaviors and to improve their mood (Chitsey et al., 2002; Lancioni et al., 2002). Snoezelen is also used in dementia care to reduce caregiving stress, assuming a positive effect of the caregivers' *quality of working life* (McKenzie, 1995; Savage, 1996; Chung, Lai, Chung & French, 2002), which in turn might promote the caregiving relationship, improve CNA communication and increase the quality of care.

In this chapter we will first explore the relationship between the '*quality of working life'* and the quality of CNA communication, as an indicator for the quality of care. Beukema (1987) defines '*quality of working life'* as 'the degree to which employees are able to shape their jobs actively, in accordance with their options, interest and needs'. Arts, Kerkstra, Van der Zee and Huijer Abu-Saad (2001) integrated three models of '*quality of working life'* into a new model, including workload and psychological outcomes. High workload may influence the level of stress reactions and job satisfaction (psychological outcomes) negatively and, consequently, decrease the quality of care.

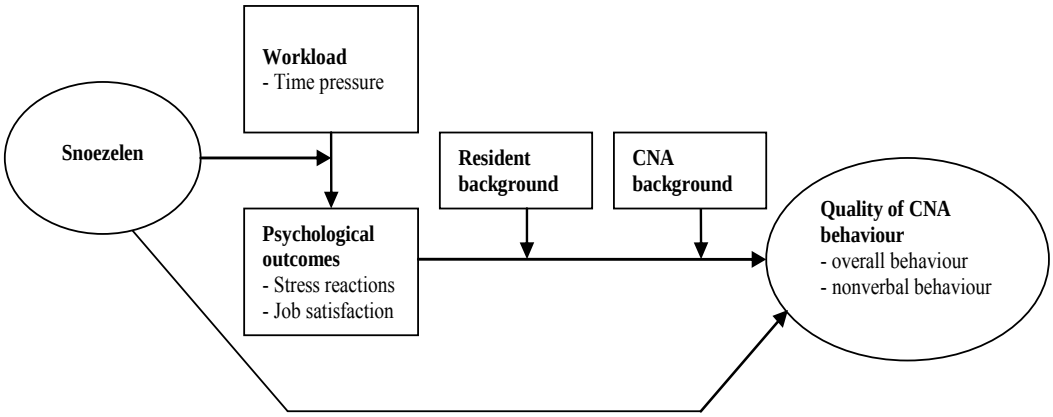

Figure 1. Conceptual model.

Next, we will investigate what other, possibly intervening, factors influence the relationship between the '*quality of working life'* and CNA communication. A factor that potentially might influence the '*quality of working life'* as well as the quality of CNA behavior is the use of a patient-centered care model such as integrated snoezelen. We will also explore the influence of background characteristics of demented residents and CNAs as possibly intervening factors on the quality of CNA communication. Figure 1 shows the conceptual model that was derived from the literature as described above.

Methods

Design

The study was performed in twelve psychogeriatric wards of six Dutch nursing homes. To investigate the '*quality of working life'* a self-administrated questionnaire was used. The quality of CNA communication was studied by using videorecordings of a well-defined care moment, i.e. morning care. Morning care is defined as the period of time between 7 a.m./12 a.m. when CNAs are concerned with bathing, grooming, dressing and toileting residents. Clinical experience and the literature have indicated that the period of morning care is difficult for residents and CNAs, because it is the time when 'problematic' behavior, such as resident agitation, is most frequent (Wells, Dawson, Sidani, Craig & Pringle, 2002). Morning care is given on every ward in every nursing home, and allows a non-biased comparison as CNAs deliver care on a one-to-one basis to the resident having the same final objective of getting the resident washed and dressed. Morning care was recorded from the moment the CNA reached the bedside until the moment the CNA left the room (usually together with the resident).

The quantitative measurements (questionnaires and videorecordings) were conducted at two time points, i.e., at the beginning of the study and 18 months later. Between the first and

the second measurement, a new care model, i.e. integrated snoezelen, was implemented in six participating wards (one ward per nursing home). These six wards received a training 'snoezelen for caregivers' to implement snoezelen in 24-h care and were coached to improve knowledge, skills and habits according to the care model. Next to these interventions at the caregivers' level, interventions at the organisational level were needed to guarantee persistent care changes. These concerned, for instance, adaptations of procedures and activities, investments in snoezel materials and adaptations in the daily schedule. In the other six wards, usual care was continued. Details of the implementation of the integrated snoezelen care model have been described elsewhere (Van Weert, Kerkstra, Van Dulmen, Bensing, Peter & Ribbe, 2004).

Procedures

Prior to the data collection, written informed consent was obtained from the residents using proxy consent wherein the legal guardian of the resident was contacted by mail, informed about the content of the study and the right to withdraw at any time during the study. Guardians were provided with a written informed consent form to allow their participation in the project, i.e. videorecording of the morning care for research purposes as well as the use of medical background characteristics. When the level of intellectual capacity of the resident allowed verbal communication, the CNA informed the resident about the videorecordings and asked permission. The CNAs as well as the research assistant were instructed to stop the videorecording when they noticed negative reactions of the resident, caused by the presence of the researcher or otherwise related to the videorecordings. As this happened only five times, no sufficient affect of terminating the videotaping on measurement of negative behavior is assumed. Immediately after the morning care, the CNAs were given the opportunity to disclose their feelings as to the videorecording. Although, in general, they experienced some (minor) stress in advance, the majority reported that stress did not really affect their behavior or that of the resident and that the video reflected the normal situation. Despite the obvious fact that they were being observed, the CNAs and residents adapted to the presence of the observer, as has been often reported in observational research before (e.g., Caris-Verhallen, Kerkstra & Bensing, 1999a; VanHaitsma, Lawton, Kleban, Klapper & Corn, 1997).

Subjects

All CNAs were recruited for the study from all shifts (day, evening and night). The majority (84.0%) worked in rotation shifts. To be eligible for participation in the study CNAs had to meet the following criteria: (1) be employed for at least three months in the nursing home (2) be employed for at least 12 hours per week and (3) working in rotation shifts or on day-duty. Temporary staff, students, and CNAs only working at night were not eligible. The CNAs participated in the observation sessions as part of their regular employment duties.

Residents had to meet the following criteria to be eligible for the study: (1) moderate to severe dementia according to DSM-III-R, diagnosed by a physician; (2) moderate to severe nursing-care dependency; (3) absence of an additional psychiatric diagnosis; (4) sense-organs completely or partially unimpaired; and (5) not bedridden. The ward staff selected a minimum of fifteen residents who fulfilled the criteria.

Measurements

Quality of CNA Overall communicative Behavior

Video assessment of CNA overall communicative behavior during morning care was done by two independent observers who assessed the quality of nurse communication. Guidelines were followed to minimize observer bias and response. The observer watched a videorecording twice before scoring. The average duration of videotaped morning care was 20.2 minutes. As there was no appropriate instrument available for the purposes of our study, an observational instrument was developed. The categories described by Kitwood (1997) formed the basis for the observation protocol existing of a quantitative measurement instrument. A pilot-study, using participant observation, was carried out in three psychogeriatric nursing homes to find out the extent to which Kitwood's categories of PPW and MSP were applicable and sufficiently exhaustive and exclusive for the analysis of the observations (Van Weert, Janssen, Van Dulmen, Spreeuwenberg, Bensing & Ribbe, 2006). The final assessment instrument comprises 22 items (10 PPW; 12 MSP) on a four point Likert scale. The items were formulated to enable the assessment of the extent to which a specific communicative behavior was implemented by a CNA during the morning care. Figure 2 provides a description of the 22 items in the final instrument.

CNA behavior	Description
Positive Person Work (PPW)	
Recognition	Acknowledging a man or women who has dementia as a person, knowing that person by name and affirm him or her in his or her uniqueness
Negotiation	Consulting the person with dementia about his or her preferences, desires, and needs, rather then being conformed to others' assumptions
Enabling	Giving the resident the opportunity to take care of him- or herself as much as possible and just 'completing' the care when necessary. The caregiver takes notice of the possibilities of the resident, by which the actual interaction between caretaker and the person who needs care can be optimized
Play	Showing spontaneity and self-expression (an experience that has value in itself), making jokes, laughing with the resident

Stimulation	Providing sensory stimuli or sensory information, without the intervention of concepts and intellectual understanding; for example through music, aromatherapy or massage. The significance of this kind of interaction is that it can provide contact, reassurance, and pleasure while making very few (cognitive) demands
Validation	Acknowledging the (subjective) reality of a person's emotions and feelings, and giving a response on the feeling level, without correcting the residents' reality. Validation involves accepting the subjective truth of a resident, attempting to understand a person's entire frame of reference, even if it is chaotic or paranoid or filled with hallucinations
Distraction	Distracting a resident in a positive way by guiding the conversation away from something unpleasant for the resident or to take the residents' mind off things. The aim of distracting is to influence mood and behavior of the resident in a positive way
Empathize	Accepting the feelings and emotions of a resident and showing warmth and affection to cover the needs of a resident
Making contact	Giving the resident attention as a person by explicitly making contact. Making contact means responding to what a resident indicates but also giving attention to a resident when he or she doesn't specifically asks for it
Respecting privacy	Treating a resident discreetly. Signs of respect of the privacy of a resident can be to close the door/curtains when a caretaker gives a resident a wash, not leaving a resident naked for an unnecessarily long period
Malignant Social Psychology (MSP)	
Treachery	Using some form of deception in order to mislead or manipulate a person, or force them into compliance
Infantilization	Treating a person very patronizingly, as a parent who is insensitive or insecure might treat a very young child
Disabling	Not allowing a person to use the abilities that he or she does have; failing to help him or her to complete actions that they have initiated. Not taking notice of the possibilities of a person
Prejudice	Not looking upon a resident and treating the resident as a human being or 'normal' person. Always thinking the resident is confused and doesn't understand anything. In the worst case, the resident is treated as an object, an alien or an outcast
Outpacing	Providing information, presenting choices, and so on, at a rate too fast for a person to understand; putting him or her under pressure to do things more rapidly then he or she can bear
Invalidation	Failing to acknowledge the subjective reality of a person's experience and especially what he or she is feeling
Ignoring	Carrying on (in action or conversation) in the presence of a person as if he or she is not there

Imposition	Forcing a person to do something, overriding desire or denying the possibility of choice on his or her part
Withholding	Refusing to respond to an ask for attention, or to meet an evident need; for example for affectionate contact
Accusation	Blaming a person for actions or failures of action that arise from his or her lack of ability, or his or her misunderstanding of the situation
Disruption	Roughly intruding on a person's action or inaction; crudely breaking his or her 'frame of reference'
Testing knowledge	Asking questions about (for a resident difficult) facts instead of trying to fit in the resident's environment

Figure 2. 'Positive Person Work' and 'Malignant Social Psychology' in people with dementia, adapted from Kitwood (1997) (see Van Weert et al., 2006).

Each of the 10 PPW-items was rated on one of four response categories: (1) not at all; (2) a little; (3) moderately; and (4) maximally. The extent to which the 12 negative items were exhibited by the CNA could be assessed on a scale from (1) not at all to (4) frequently. Two subscales were constructed by counting the sumscores of the PPW subitems (subscale PPW; theoretical range 0-30) and the MSP subitems (subscale MSP; theoretical range 0-36). The higher the score, the more positive (PPW) or the more negative (MSP) the behavior of the CNA was assessed. The internal consistency of the subscales was good with a Cronbach's alpha of .88 for PPW (10 items) and .78 for MSP (12 items).

Inter-observer reliability was established by calculating the overall average pairwise Pearson correlation of 25 (10%) videorecordings that were rated by both observers. The mean Pearson's r for the total of 22 sub-items was .77 (range .66 to .89); .75 for the PPW sub-items (range .66 to .89) and .79 for the MSP sub-items (range .69 -.86), indicating a good inter-observer reliability.

Quality of CNA Nonverbal Communication

The use of nonverbal communication is essential with people who have limited verbal comprehension (Chambers, 2003). Nonverbal behavior is an eminent mode of expressing empathy and support and an important tool to make contact with residents (Bensing, Kerssens & Van der Pasch, 1995; Caris-Verhallen, Kerkstra & Bensing, 1997; Caris-Verhallen et al., 1999a; Roter & Hall, 1992). Therefore, nonverbal communication was measured in addition to CNA overall communicative behavior. Video assessment of nonverbal communicative behavior during morning care was done by three independent observers, using the OBSERVER computer system (Noldus, Trienes, Hendriksen, Jansen & Jansen, 2000). The assessors were trained and guidelines were followed to minimize observer bias and reactivity. Every videorecording was observed twice.

Based on the research of Caris-Verhallen, Kerksta and Bensing (1998), Caris-Verhallen et al. (1999a), Kerkstra, Van Bilsen, Otten, De Gruijter and Weide (1999) and Kruijver (2001), nonverbal affective behaviors were selected that appeared to be particularly important for the establishment of the nurse-elderly relationship. The observation scheme contains the

following three indicators of rapport-building nonverbal communication: Eye-contact, smiling and affective touch. Eye-contact, smiling and affective touch convey involvement, closeness, friendliness and attentiveness. They are not necessary in performing nursing tasks, but do facilitate interaction between nurses and patients (Kruijver, 2001). Eye-contact was defined as 'resident-directed gaze; the CNA is looking at the eyes of the resident'. Smiling is 'a facial utterance of friendliness directed to the resident'. Affective touch shows empathy, intends to make contact with the resident and was defined as 'relatively spontaneous and affective touch, which is not necessary for the completion of a nursing task'. The instrument has shown to be reliable in previous studies (Caris-Verhallen et al., 1998; Caris-Verhallen, 1999b; Kerkstra et al., 1999; Kruijver, 2001). For eye-contact and affective touch, the duration was rated. For eye-contact and smiling, the frequency was counted. The duration of smiling was often too short to assess reliably.

To rate inter-observer reliability, the observers rated the same 25 (10%) videorecordings. Inter-observer correlations (mean Pearson's r) for the nonverbal behaviors was .93 (range .83 to .99), indicating an excellent inter-observer reliability.

Quality of Working Life

Workload

Workload was measured by a 5-point Likert scale question about perceived time pressure. Respondents could make a choice between one of five response categories: (1) perceiving too much time pressure; (2) perceiving time pressure; (3) neutral (no time pressure, not quiet); (4) perceiving no time pressure (quiet) and; (5) perceiving too little time pressure (too quiet). Time pressure was also recoded in two categories: no or little time pressure (score 3-5), time pressure (score 1or 2).

Stress Reactions

The short version of the General Health Questionnaire (GHQ-12) was used to measure the CNAs' perceived stress on a range from 0 to 12 (Koeter & Ormel, 1987; Ormel, Koeter, Van den Brink & Giel, 1989a; Ormel, Koeter & Van den Brink, 1989b). Ratings pertained to the weeks preceding to the administration of the scale. Each of the 12 items were rated on one of four answering categories: 'absent' (0 points), 'the same as usual' (0 points), 'more than usual' (1 point) or 'a lot more than usual' (1 point). Cronbach's alpha of our data was 0.81. A total score was calculated by counting the sumscore of the ratings on the 12 items (theoretical range 0-12). GHQ was also recoded in two categories: no or little stress reactions (sumscore <2), stress reactions (sumscore 2-12).

Job Satisfaction

Job satisfaction of the CNAs was measured by using the Maastricht Work Satisfaction Scale for Healthcare (MAS-GZ) (Landeweerd, Boumans & Nissen, 1996a; Landeweerd, Boumans & Nissen, 1996b). The MAS-GZ consists of seven sub-scales with three items, each of which have to be rated on a 5-point scale. An overall satisfaction sumscore was calculated, including all 21 items, with a theoretical range from 0 to 84 (α =0.89). The mean score of overall satisfaction (sumscore/21) was used to recode job satisfaction in three

categories: dissatisfied (mean score <2), 1=neutral (mean score 2 to 3), satisfied (mean score ≥3).

Used Care Model

All participating wards did not use a particular care model at the time of the first measurement; all CNAs delivered 'usual care'. Between the first and the second measurement, six wards implementated integrated snoezelen in 24-h care. In the dataset, a variable was constructed that indicates whether the integrated snoezelen care model (1) or usual care (0) was delivered.

Background Characteristics Residents

Residents' background characteristics as gender, age, duration of illness, duration of residence in nursing home and diagnosis were derived from the medical file. Care dependency was measured by the Care Dependency Scale (CDS) for demented in-patients, an instrument for use in psychogeriatric nursing homes (Dijkstra 1998; Dijkstra, Buist, Dassen & Van den Heuvel, 1999a; Dijkstra, Buist, Moorer & Dassen, 1999b). The instrument contains 15 indicators of care dependency, e.g. mobility, day and night rhythm, communication, contact with others and consciousness of deviant behavior. The degree of care dependency was assessed on a five-point Likert-scale. A total sum score with a theoretical range from 15 till 75 was computed; the higher the score, the less the dependency on nursing care. The internal consistency of the scale was high (α=.93) (Van Weert, Van Dulmen, Spreeuwenberg, Ribbe & Bensing, 2005a).

Background Characteristics CNAs

The questionnaire '*quality of working life'* contained questions about background characteristics such as gender, age, position, hours of employment per week, psychogeriatric experience and duration of employment at this ward.

Statistical Analysis

Data Management

The number of missing values was limited. Observations of videorecordings was complete. All questionnaires '*quality of working life'* were reviewed immediately after they were received. Uncompleted questionnaires were sent back to the CNA. The remaining missing values on items that were part of a (sub-)scale were substituted according to the 'mean value of valid sub-tests principle': The missing value was replaced by the mean value calculated from the valid item scores of the (sub-)scale obtained for the same case at the same time point (Schrijnemaekers et al., 2003). This replacement strategy was only used if 25% or less of the items of the (sub-)scale had missing values.

Data Analysis

Background characteristics were compared using Chi-square tests and independent sample *t*-tests, when appropriate. First, the relationship between '*quality of working life'*

(categories of time pressure, stress reactions and job satisfaction) and quality of CNA behavior (mean scores of PPW, MSP, eye-contact, smiling and affective touch) was explored by bivariate analyses using Anova with posthoc comparisons (Tukey). Next, the relationship between resident background characteristics (gender, age, duration of illness, duration of residence in nursing home, care dependency) was explored by bivariate correlations. Variables that showed a significant relationship were included in a multivariate model. The same was done with CNA background characteristics (gender, age, hours of employment per week, psychogeriatric experience and duration of employment at this ward) and care model (integrated snoezelen or usual care). Multiple regression analysis was used to examine predictors of differences in the quality of CNA communication. The following five sets of variables were entered, each in a separate block 1) resident characteristics, 2) CNA characteristics, 3) care model (0,1; 1=integrated snoezelen), 4) workload (time pressure; continuous), 5) psychological outcomes: stress reactions (sumscore) and job satisfaction (sumscore), and 6) interaction terms (e.g., stress reactions x snoezelen). We conducted separate regressions with the following five indicators of the quality of CNA communication as dependent variables: PPW, MSP, eye-contact (duration), smiling (frequency) and affective touch (duration). As duration of eye-contact and frequency of eye-contact were highly correlated ($r=.872$, $p<.01$), only duration of eye-contact was added into the model. Effects were tested two sided at a significance level of 0.05. Analyses were performed using SPSS version 14.0.

Results

Response

134 CNAs were selected to participate in the study, five of whom did not complete the questionnaire '*quality of working life'* (one refused to complete the questionnaire, one changed her job, one was lost in the mail, two did not respond for unclear reasons). From 109 CNAs (81.3% of 134), a videorecording could be made at the beginning of the study and from 72 CNAs, a videorecording could also be made at the second measurement. 84 CNAs were included once (37 CNAs only at the first time point; 47 CNAs only at the second time point). If more than one videorecording was made from the same CNA, only the first videorecording was used. In total, 109 questionnaires and videorecordings from CNAs were analysed from the first measurement and 119 from the second measurement (total n=228). At the second time point, all videotaped CNAs completed the questionnaire. 58 CNAs were using the integrated snoezelen care model at the second time point (33 of them where also included at the first time point before the implementation of the integrated snoezelen care model; 25 were only included at the second time point). The CNAs who received the intervention were to a large extent comparable on background characteristics with the CNAs who continued in delevering usual care. There were no significant differences on background characteristics (gender, age, hours of employment, psychogeriatric experience, years of employment on this ward) between the groups.

Background Characteristics

Table 1 summarizes the demographic characteristics of CNAs at the first time they were included in the study. The table showes that the majority of the participants is female (91.7%) en working in the position of nursing assistant (78.2%). The mean experience in psychogeriatric care is 7.6 years and the mean working experience on the present ward 3.3 years.

Table 1. Background characteristics of participating CNAs (n=156)

CNAs' Characteristics (n=156)		
Gender: female (n, (%))	143	(91.7)
Age(years, (sd))	35.1	(10.4)
Hours employment per week (mean hours, (sd))	29.2	(8.9)
Psychogeriatric experience (mean years, (sd))	7.6	(6.9)
Employed on this ward (mean years, (sd))	3.3	(3.5)
Position (n, (%)):		
- Team leader	14	(9.0)
- Nursing assistant	122	(78.2)
- Other (ward assistant, geriatric helper)	20	(12.8)

Table 2 shows the background characteristics of participating residents. Almost two-third of the residents is diagnosed with Alzheimer Disease or a combination of Alzheimer Disease and Vascular dementia (74.1%). The majority is female (80.7%) with a mean age of 83.6 years. They are living in the nursing home since 3.1 years (on average). Scores on care dependency indicate that participating residents are moderately to severe demented with a mean illness duration of 6.2 years.

Table 2. Background characteristics of residents (n=228)

Residents' characteristics		
Gender female (n, (%))	184	(80.7)
Age (years, (sd))	83.6	(8.0)
Duration of illness (years, (sd))	6.2	(3.1)
Residing in nursing home (years, (sd))	3.1	(2.6)
Care dependency (CDS; 15-*75*)[a] (mean score, (sd))	28.3	(11.6)
Memory impairment (BIP7; *0*-21)[a] (mean score, (sd))	13.8	(3.7)
Diagnosis (n, (%)):		
- Alzheimer's	127	(55.7)
- Vascular dementia	39	(17.1)
- Combined Alzheimer's + vascular	42	(18.4)
- Other dementia	20	(8.8)

[a] the score in italic indicates the most favourable score (least impairment) for the scale.
sd=standard deviation; CDS = Care Dependency Scale; BIP = Dutch BehaviorObservation Scale for Psychogeriatric In-patients.

Single Relationship between Quality of Working Life and Quality of CNA Behavior

Table 3 shows the results of the oneway Anova analyses, in which the relationship between time pressure, stress reactions and job satisfaction is explored.

The main results are also summarized in figure 3 to 7.

CNAs who perceive no or little time pressure and who are satisfied with their work show more positive behaviors towards demented nursing home residents during morning care than their dissatisfied collegues who perceive time pressure (figure 3). CNAs experiencing high stress reactions show less positive (lower score on PPW) and more negative (higher score on MSP) behavior (figures 3 & 4).

Regarding non-verbal communication, results are similar. Perceived workload is related to less eye-contact (figure 5), less smiling (figure 6) and less affective touch (figure 7). CNAs with low stress reaction levels especially show more affective touch (figure 7). They also make longer eye-contact with residents than those with high stress levels (table 3; not in figure). Satisfied CNAs make more eye-contact and laugh more often with the demented residents than dissatisfied CNAs. CNAs who experience a high job satisfaction also laugh more than their neutral satisfied collegues (not in figure).

Positive Person Work

Figure 3. Relationship between time pressure, stress reactions, job satisfaction and Positive Person Work (PPW; mean total score).

Malignant Social Psychology

Figure 4. Relationship between time pressure, stress reactions, job satisfaction and Malignant Social Psychology (MSP; mean total score).

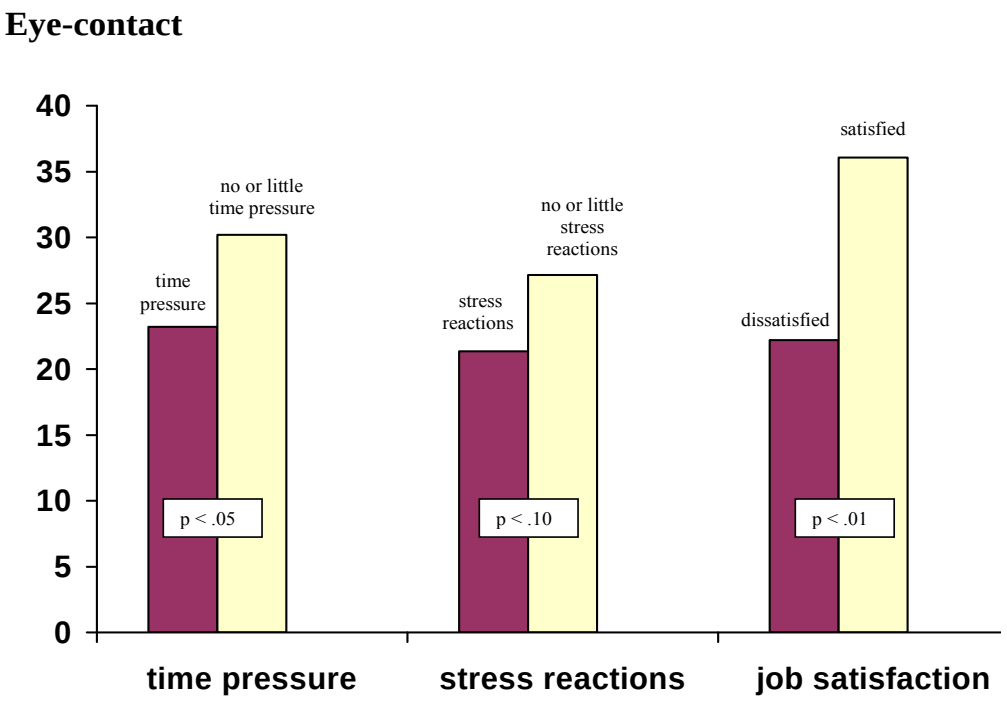

Figure 5. Relationship between time pressure, stress reactions, job satisfaction and eye-contact (mean frequency during morning care).

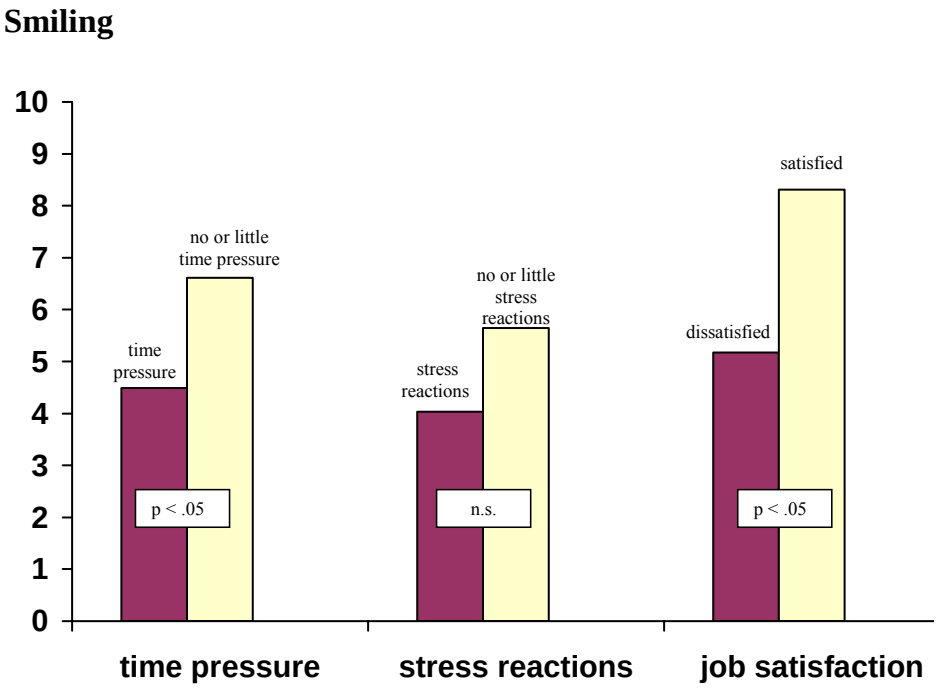

Figure 6. Relationship between time pressure, stress reactions, job satisfaction and smiling (mean frequency during morning care).

Figure 7. Relationship between time pressure, stress reactions, job satisfaction and affective touch (mean duration in seconds during morning care).

Table 3. Relationship between time pressure, stress reactions and job satisfaction and CNA communication (PPW, MSP, eye-contact, smiling and affective touch) (Oneway ANOVA)

	Time pressure[a]	**M**	**(sd)**	**P**	**Stress reactions**[b]	**M**	**(sd)**	**P**	**Job satisfaction**[c]	**M**	**(sd)**	**P**
Positive Person Work (PPW) (0-30[d])	No time pressure	16.53	(7.00)	.003**	Little stress reactions	15.43	(7.42)	.003**	Dissatisfied	11.91	(7.06)	.02*
	Time pressure	13.63	(7.12)		Stress reactions	12.38	(6.64)		Neutral	14.53	(7.05)	
									Satisfied	17.55	(7.50)	
Malignant Social Psychology (MSP) (0-36[e])	No time pressure	4.34	(4.50)	.33	Little stress reactions	4.35	(4.60)	.05*	Dissatisfied	7.13	(7.16)	.06
	Time pressure	5.04	(5.54)		Stress reactions	5.85	(6.25)		Neutral	4.50	(4.93)	
									Satisfied	4.38	(4.21)	
Eye-contact (frequency)	No time pressure	30.20	(23.15)	.02*	Little stress reactions	27.13	(22.73)	.06	Dissatisfied	22.22	(22.21)	.01**
	Time pressure	23.19	(19.56)		Stress reactions	21.35	(15.16)		Neutral	24.32	(19.68)	
									Satisfied	36.07	(25.70)	
Eye-contact (duration in seconds)	No time pressure	131.10	(158.11)	.02*	Little stress reactions	116.27	(138.51)	.05*	Dissatisfied	106.37	(197.24)	.08
	Time pressure	92.55	(98.27)		Stress reactions	80.20	(68.38)		Neutral	99.04	(103.40)	
									Satisfied	155.06	(161.89)	

Table 3. Continued

	Time pressure[b]	**M**	**(sd)**	**P**	**Stress reactions** [c]	**M**	**(sd)**	**P**	**Job satisfaction**[d]	**M**	**(sd)**	**P**
Smiling (frequency)	No time pressure	6.61	(7.57)	.03*	Little stress reactions	5.65	(7.46)	.11	Dissatisfied	5.17	(7.42)	.04*
	Time pressure	4.49	(6.52)		Stress reactions	4.03	(5.26)		Neutral	4.82	(6.51)	
									Satisfied	8.31	(8.80)	
Affective touch (duration in seconds)	No time pressure	42.45	(59.85)	.05*	Little stress reactions	39.84	(56.69)	.004**	Dissatisfied	28.33	(36.62)	.87
	Time pressure	28.64	(45.06)		Stress reactions	18.57	(26.90)		Neutral	34.41	(54.01)	
									Satisfied	34.26	(44.61)	

* p < .05; ** p < .01; *** p < .001.
[a] no or little time pressure (n=83), time pressure (n=145).
[b] no or little stress reactions (n=168), stress reactions (n=65).
[c] dissatisfied (n=23), neutral (n=176), satisfied (n=29).
[d] a higher score indicates more Positive Person Work, i.e. more *positive* CNA behaviour
[e] a higher score indicates more Malignant Social Psychology, i.e. more *negative* CNA behaviour

Table 4. Predictors of CNA communication using multiple regression analysis (total models)

Blocks	**Positive Person Work**[a]		**Malignant Social Psychology**[b]		**Eye-contact (duration)**		**Smiling (frequency)**		**Affective touch (duration)**	
	B	(SE)	B	(SE)	B	(SE)	B	(SE)	B	(SE)

Blocks	Positive Person Work[a]		Malignant Social Psychology[b]		Eye-contact (duration)		Smiling (frequency)		Affective touch (duration)	
Intercept	6.463	(5.227)	6.882	(4.689)	-91.577	(98.655)	-4.654	(5.921)	-20.045	(40.805)
Background variables resident										
Care dependency[c]	0.139***	(0.032)	-0.060*	(0.029)	-0.664	(0.612)	0.039	(0.037)	-0.844***	(0.252)
Age	-0.024	(0.048)	0.004	(0.043)	1.380	(0.909)	0.045	(0.055)	0.896*	(0.372)
Background variables CNA										
Age	0.105***	(0.037)	-0.012	(0.033)	2.279***	(0.699)	0.049	(0.042)	0.584*	(0.286)
Care model										
Integrated snoezelen (0,1; 0=usual care)	8.767***	(0.913)	-1.993*	(0.819)	137.141***	(17.229)	6.496***	(1.034)	56.838***	(7.748)
Workload										
Time pressure[d]	0.068	(0.625)	-0.495	(0.561)	6.863	(11.795)	-0.031	(0.708)	-0.001	(4.833)
Psychological outcomes										
Stress reactions[e]	-0.287	(0.191)	0.197	(0.171)	-2,654	(3.604)	-0.004	(0.216)	-2.651	(1.564)
Job satisfaction[f]	0.231	(1.028)	0.407	(0.922)	-9.928	(19.400)	0.704	(1.164)	-8.753	(8.017)
Interaction terms										
Stress reactions* snoezelen care model									-9.758*	(4.124)
R^2										
R^2 model with only resident variables	0.092***		0.028*		0.031*		0.028*		0.065***	
R^2 change after including CNA age	0.025**		0.001		0.036**		0.006		0.017*	
R^2 change after including care model	0.287***		0.035**		0.229***		0.162***		0.180***	
R^2 change after including workload	0.002		0.007		0.002		0.000		0.002	
R^2 change after including psychological outcomes	0.007		0.006		0.002		0.001		0.024*	
R^2 change after including interaction stress*care model									0.018*	
R^2 total model	0.413		0.077		0.301		0.197		0.306	

* p<0.05, **p<0.01, ***p<0.001; [a] A higher score indicates more Positive Person Work, i.e. more *positive* CNA behaviour; [b] A higher score indicates more Malignant Social Psychology, i.e. more *negative* CNA behaviour; [c] A higher score indicates *less* care dependency; [d] A higher score indicates more perceived workload (time pressure); [e] A higher score indicates more stress reactions; [f] A higher score indicates more job satisfaction.

Single Relationship between Background Characteristics and the Quality of CNA Communication

There is no relationship between the residents' gender, duration of illness or duration of residence in nursing home and the quality of CNA communication. However, the residents' age is positively related to the duration of eye contact (r=.174, p< .01), frequency of eye contact (r=.193, p<.01) and duration of affective touch (r=.227, p<.01). This means that CNAs show more eye-contact and more affective touch with older residents. Moreover, care dependency of residents is positively associated with PPW (r=.297, p<.01) and negatively associated with MSP (r=-.163, p<.05) and duration of affective touch (r=-.136, p<.05). This indicates that CNAs use more positive communicative behavior if the resident is less dependent and more negative communicative behavior if the resident is more dependent. However, affective touch increases when the resident is more dependent (not in table).

The same was done with CNA background characteristics (gender, age, hours of employment per week, psychogeriatric experience and duration of employment at this ward). The age of the CNA is positively related to PPW (.160, p<.05), duration of eye-contact (r=.198, p<.01), frequency of eye-contact (r=.203, p<.01) and duration of affective touch (r=.144, p<.05). This means that older CNAs use more PPW, eye-contact and affective touch. There are no other significant correlations between CNA background and the quality of CNA communication (not in table).

The use of the integrated snoezelen care model is positively associated with PPW (r=.565, p<.01), duration of eye-contact (r=.505, p<.01), frequency of eye-contact (r=.530, p<.01), smiling (r=.417, p<.01) and affective touch (r=.441, p<.01) and negatively related to MSP (r=-.209, p<.01). This indicates that CNAs who integrate snoezelen in 24-h dementia care use more positive communicative behavior (PPW), less negative communicative behavior (MSP), more eye-contact, more smiling and more affective touch as compared to CNAs who deliver usual care (not in table).

Significant Associations with the Quality of CNA Communication

The results of the multivariate regression analysis are shown in Table 4.

Background and Disease Characteristics

Care dependency of residents is associated with PPW, MSP and affective touch. Overall, CNAs behave more negatively to highly dependent residents (i.e., show less PPW and more MSP), but on the other hand, they use more affective touch in the care for these residents. Moreover, the older the resident, the more affective touch is used by the CNA.

The age of the CNA is positively associated with PPW, eye-contact en affective touch. This means that older CNAs show more PPW, more eye-contact and more affective touch than their younger counterparts.

Use of Integrated Snoezelen Care Model

All indicators of the quality of CNA communication are positively related to the use of the integrated snoezelen care model. CNAs that integrate snoezelen in 24-h dementia care show more PPW (β=.547, p=.000), less MSP (β=-.192, p=.004), more eye-contact (β=.489, p=.000), more smiling (β=.410, p=.000) and more affective touch (β=.433, p=.000) than CNAs that give usual care when controlled for resident background characteristics and CNA age. These associations remain significant after adding time pressure, stress reactions and job satisfaction to the regression model (see Table 4).

Quality of Working Life

A significant negative association between stress reactions and affective touch (β=-.170, p=.010) remains after controlling for resident characteristics, CNA age and the integrated snoezelen care model, indicating that more stress reactions are related to less affective touch. This significant relationship disappears when adding the interaction between use of the integrated snoezelen care model and stress reactions on affective touch into the regression model (β=-.155, p=.019; Table 4). This means that the effects of stress reactions on affective touch are different for CNAs who deliver integrated snoezelen care than for CNAs who deliver usual care. CNAs with stress reactions who integrate snoezelen in the care show more affective touch than CNAs with stress reactions who give usual care.

No other significant relationships between time pressure, stress reactions and satisfaction on the one hand and indicators of the quality of CNA communication on the other hand were found when controlling for resident characteristics, CNA age and the integrated snoezelen care model (see Table 4). Except for the interaction between use of the integrated snoezelen care model and stress reactions on affective touch, none of the interactions between snoezelen and workrelated variables is significantly associated with CNA communication.

Conclusion

The results of this study show a positive relationship between CNAs' experienced *'quality of working life'* and the quality of CNA communication. No or little time pressure, little stress reactions and satisfaction with work are related to more positive overall communication with demented nursing home residents. Regarding nonverbal communication, results are similar. High perceived time pressure is associated with less eye-contact, less smiling and less affective touch. Low levels of stress reactions are associated with longer eye-contact and affective touch. These results indicate that a high workload, high levels of stress reactions and dissatisfaction are reflected in the way CNAs communicate with their residents and, consequently, in the quality of care. However, the use of an integrated snoezelen care model appears to be an important, intervening factor that clearly affects CNA communicative behavior. This raises the question: Does the implementation of a person-centred care model, such as snoezelen, improve the quality of working life and subsequently

the quality of CNA communicative behavior? Or does the implementation of a person-centred care model, such as snoezelen, learn CNAs how to communicate with demented nursing home residents, resulting in a better CNA-resident relationship and subsequently into improved quality of working life? In other words, how do perceived *'quality of working life'*, quality of caregiver communicative behavior and, finally, quality of life of demented nursing home residents exactly interfere with each other? In doctor-patient communication, a reciprocity has been described in the level of affect that is exchanged between doctor and patient. More positive affect is exchanged in consultations of doctors with higher job satisfaction and more affect of the doctor result in more affect of the patient and vice versa (Roter & Hall, 2006; Street, Gordon & Haidet, 2007). Comparable mechanisms might exist in psychogeriatric care, although demented people probably have more difficulties in expressing affect than healthy elderly. The behavior of demented elderly is mainly reactive and they are often unconscious of their reactions. They usually cannot be expected to initiate communication, but are more likely to respond to the encouragement of other persons. Therefore, the efforts of caregivers to facilitate residents' responses might even be more important than in other care settings. Improving the perceived *'quality of working life'* of caregivers might be a condition to enable caregivers to show affect en deliver high quality care, possibly resulting in improved quality of life of nursing home residents. This assumption is in line with earlier research among physicians, finding that job satisfaction is related to self-perceived problems in quality of care, such as maintaining a continuous relationship that promotes high quality care and providing high quality of care to all patients (DeVoe, Fryer, Hargraves, Phillips & Green 2002). In accordance with this assumption (see also the conceptual model; Figure 1), the implementation of snoezelen is supposed to be helpful to improve the *'quality of working life'* and therefore the quality of care. However, the results of the present study indicate that snoezelen seems to have a main effect on CNA communication rather than a mediated effect through quality of working life. In earlier articles, positive effects of the implementation of snoezelen were described at caregivers' level, i.e. decreased time pressure, perceived problems, stress reactions and increased job satisfaction (Van Weert, Van Dulmen, Spreeuwenberg, Bensing & Ribbe, 2005c), as well as at residents' level (Van Weert et al., 2005a; Van Weert, Van Dulmen, Spreeuwenberg, Ribbe & Bensing, 2005b). Looking at the results of the present study, one might argue that factors relating workload, psychological caregivers' outcomes and residents' outcomes possibly reinforce each other in circular processes, rather than in a linear proces from intervention to improved *'quality of working life'* to improved CNA communication to improved quality of life. Caregivers, for instance, mentioned that their attitude towards working under time pressure had changed during the implementation period (Van Weert et al., 2004). Though the training was intended to change this attitude, we do not know whether this was a separate contribution of the training, inducing improved psychological caregivers' outcomes (e.g., stress reactions, job satisfaction). It might also be possible that the snoezelen intervention first resulted in decreased disturbing behaviors of residents and that the awareness of these decreased resident behaviors directly attributed to improved psychological work-related outcomes and, consequently, to reported changes in workload. Most likely however, all factors contribute in some way to the positive findings in other factors. More research is needed to enravel these processes in detail.

Kitwood's Dialectical Framework appears to be an appropriate theoretical model, in which the effect of caregivers' behavior on demented residents' behavior is acknowledged (Kitwood 1993a; 1993b; 1996; 1997; 1998). Kitwood (1997) argued that a central role in caregivers is to recognize the richness of a person. The 'Positive Person Work (PPW)' of caregivers in dementia care include caregivers' behavior that is conductive to the improvement and maintenance of the residents' well-being. The essence of 'Positive Person Work' is the interaction, initiated by caregivers, according to each individuals' needs, personality and abilities. The direct and pleasurable stimulation of the senses, in a way that accords with the values and scruples of the person with dementia, is an indicator of 'Positive Person Work' too (Kitwood, 1997). The implementation of a new care model requires (management) attention at all levels, i.e., caregivers' level, residents' level and organisational level to achieve long-lasting, positive changes in the quality of care. To be able to deliver resident-oriented or person-centred care, 'staff-centred work environments' or 'type B settings', as described by Kitwood, are needed (1997). In these settings the manager's role is more one of enabling and facilitating than of controlling, and this involves giving a great deal of feedback to staff. The whole staff group (manager, senior care team and care assistants) thrives on cooperation and sharing. There is a strong commitment to minimize the differential of power. The organisation is highly skilled in interpersonal matters and has well-developed communication pathways (Kitwood, 1997). The results of this study support the importance of person-centred care models to reach high quality care. To be able to deliver person-centred care, interventions are necessary at caregivers' level as well as at organisational level (Van Weert et al., 2004). The implementation of the integrated snoezelen care model in the present study intended to teach caregivers how to apply qualitatively high, person-centred care and to combine this with sensory stimulation. At the caregivers' level, a four-day in-house training 'snoezelen for caregivers' was provided and individual snoezel care plan were written for each resident, based on a life style history interview with family members and a stimulus preference screening, to find out which sensory stimuli the resident preferred. At the organisational level, a study group was set up in each experimental ward to support the head nurse and/or 'sensory stimulation coordinator' to develop required organisational changes, to evaluate the implementation process and to make adaptations where necessary. During the 18-month implementation period, the caregivers were offered three in-house supervision meetings under the guidance of a professional trainer who also conducted the first training. In addition, there were two general meetings, attended by three representatives of each nursing home (e.g., head nurse, care manager) to support the implementation of snoezelen at the organisational level. De Lange (2004) described experiences regarding the implementation of a new care model. Factors that promoted successful implementation as planned were enthusiastic ward leadership and consultants who were involved and who had time to support the implementation. Factors that hindered the introduction were changes in ward or team leadership, loss of trained carers, working with temporary staff and arrival of new staff who had not been trained. Holtkamp (2003) identified constant attention from the different levels of management as essential to motivate staff members to apply complex interventions. Schrijnemaekers (2002) also stated that organisational changes are often needed and strengthened the importance of the stimulating and facilitating role of management. This

might only be achieved by the development of an implementation strategy before the start of the intervention. The stepwise implementation cycles, including identification of obstacles, development of implementation strategies and process evaluations (Grol, 1997;. Grol & Grimshaw, 2000), might be helpful, but have to be initiated by the management. The model for Implementation of Change in Health Care (ICHC-model) (Theunissen, Te Pas & Friele, 2003) appeared to be useful to evaluate the implementation process (Van Weert et al., 2004), but might also be used by management members to evaluate change processes in daily practice. The present study shows that CNA communication is also influenced by the care dependency of the resident, the residents' age and the age of the CAN. These factors should get attention in implementation processes too, i.e. special attention is needed to guide CNAs, especially the younger ones, how to handle very old, highly dependent residents.

Strengths of the Study

This study is unique in the second-by-second real-time observation in the natural setting by videorecordings during daily care. The use of videorecordings is a rather new and useful instrument in studying psychogeriatric care. Videorecordings allow for a blind assessment, which has additional value for the methodological strength of the study. Videorecordings can be analysed in detail and be watched over and over again, which promotes a secure assessment. The establishment of acceptable to good inter-observer reliability scores further increases the reliability of the results. Another major advantage of videorecordings is the possibility to assess nonverbal communication. Affective behavior is important in all caregivers' behavior and mainly communicated by nonverbal communication. It determines the quality of the caregiver-patient relationship and the quality of care, as has previously been described in other care settings (Bensing, 1991). The videorecordings enabled the research team to carefully assess nonverbal communication and the quality of (affective) caregivers' behavior. In recent literature, describing resident-CNA interaction in nursing homes, it is recommended to include possibly important nonverbal components of social interaction such as eye contact and non-task-related comforting touch in future observational research (Burgio, Fisher, Fairchild, Scilley & Hardin, 2004). The present study is, as far as we know, the first to have made such a detailed analysis of nonverbal communication in dementia care.

For the assessment of the videorecordings, different measurements were used. The measurements were split up between three observers. One of the observers was trained to rate all measurements of the observation protocol, but the other two only rated specific parts. Therefore, the quality of caregivers' behavior (PPW and MSP) was often assessed by another observer than CNA' nonverbal communication in the same videorecording. This has advantages above participated observations. When one rater does all assessments, there is a chance that the assessment of a measurement will be influenced by the assessment of another instrument (e.g., when the quality of CNA behavior would be rated as high quality, nonverbal communication could be rated more positively too). When the measurements are separate, this potential bias might be avoided.

Limitations of the Study

This study has some limitations. First, the implementation of snoezelen on the experimental wards aroused new enthusiasm in staff members. This might be subsumed within the 'Hawthorne effect' and may explain some of the results. Caregivers who get the opportunity to follow a training may have an improved job satisfaction regardless of the content of the training. Therefore, the differences between treatments and controls might be partly explained by the higher level of attention and training received by the treatment group. If the 'Hawthorne effect' would explain all the results of the present study, this effect would have occurred in other studies too. Schrijnemaekers et al. (2003) found only limited differences on work-related outcomes, despite additional attention and education in the experimental group compared to 'usual care' in the control group. Moreover, our results were not marginal, but convincing and in conformity with the findings of the parallel studies. Therefore, the 'Hawthorne effects' is not assumed to explain all the effects in the present study.

As this study has been using videorecordings, social desirability might have influenced CNA performance during the observations. Several authors have mentioned this potential bias. They concluded that the occurrence of performance bias in nursing research seems to be limited (Bottorff, 1994; Caris-Verhallen, 1999b; Kruijver, 2001; VanHaitsma et al., 1997). The CNA in our study reported that they experienced some stress in anticipation, but that, on the whole, the video-taped morning care reflected the normal situation.

With regard to the assessment of caregivers' behavior, a scale was developed, including positive caregiver behaviors, based on Kitwoods' Dialectical Framework. The findings support the utility of the scale in nursing research, however, further research is needed to describe other validation aspects. Recommendations for future research are additional tests on criterion-related validity, construct validity, intra-rater reliability and test-retest reliability. The present study also does not give a deeper understanding of more or less effective indicators of 'Positive Person Work'. Future research has to elaborate the question whether some of these indicators (or combinations of these) are more decisive for well-being than others.

The aim of the videorecordings was to provide supplementary data to the observations on the ward with the advantage of blinded assessment. Yet, the videos were recorded during morning care, which is only a small part of the 24-h care. Since the use of videorecordings appeared to provide meaningful, additional information in the present study, it is recommended to extend the video-observations to other care moments in future research.

The results obtained in this study indicate a positive relationship between workrelated factors ('*quality of working life'*) and the quality of nurse communication in psychogeriatric care as well as a surplus value of the application of a person-centred care model (such as integrated snoezelen) for demented nursing home residents. Although the usefulness of the findings for clinical and research purposes needs to be interpreted with the study's limitations in mind, the study results support the implementation of non-pharmacological approaches, such as an integrated snoezelen care model, in the care for demented nursing home residents.

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